

SEQUENCE LISTING

<110> Walke, D. Wade  
Wang, Xiaoming  
Scoville, John  
Turner, C. Alexander Jr.

<120> Novel Human Semaphorin Homologs and Polynucleotides Encoding the Same

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Leu Leu Glu Asp Thr Trp Thr Thr Phe Met Lys Ala Arg Leu Asn Cys						
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Ser Arg Pro Gly Glu Val Pro Phe Tyr Tyr Asn Glu Leu Gln Ser Ala						
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Phe His Leu Pro Glu Gln Asp Leu Ile Tyr Gly Val Phe Thr Thr Asn						
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Val Asn Ser Ile Ala Ala Ser Ala Val Cys Ala Phe Asn Leu Ser Ala  
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 Ile Ser Gln Ala Phe Asn Gly Pro Phe Arg Tyr Gln Glu Asn Pro Arg  
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 Thr Pro Glu Pro Cys Val Thr Gln Asp Ser Val Arg Phe Ser His Leu  
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 Val Val Asp Leu Val Gln Ala Lys Asp Thr Leu Tyr His Val Leu Tyr  
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 Lys Thr Cys Asn Pro Glu Gly Cys Pro Glu Val Arg Arg Asn Thr Pro  
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 Glu Gln Arg Phe Arg Phe Thr Cys Arg Ala Pro Leu Ala Asp Pro His  
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 Gly Leu Gln Phe Gly Arg Arg Arg Thr Glu Thr Arg Thr Cys Pro Ala  
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<213> homo sapiens

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 Pro Gly Ala Arg Thr Ala Glu Gly Pro Ile Met Val Leu Ala Gly Pro  
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 Leu Ala Val Ser Leu Leu Pro Ser Leu Thr Leu Leu Val Ser His

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Leu Ser Ser Ser Gln Asp Val Ser Ser Glu Pro Ser Ser Glu Gln Gln			
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Leu Cys Ala Leu Ser Lys His Pro Thr Val Ala Phe Glu Asp Leu Gln			
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Pro Trp Val Ser Asn Phe Thr Tyr Pro Gly Ala Arg Asp Phe Ser Gln			
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Leu Ala Leu Asp Pro Ser Gly Asn Gln Leu Ile Val Gly Ala Arg Asn			
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Tyr Leu Phe Arg Leu Ser Leu Ala Asn Val Ser Leu Leu Gln Ala Thr			
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Glu Trp Ala Ser Ser Glu Asp Thr Arg Arg Ser Cys Gln Ser Lys Gly			
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Lys Thr Glu Glu Cys Gln Asn Tyr Val Arg Val Leu Ile Val Ala			
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Gly Arg Lys Val Phe Met Cys Gly Thr Asn Ala Phe Ser Pro Met Cys			
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Ile Ser Ser Gln Gly Glu Leu Tyr Ala Ala Thr Val Ile Asp Phe Ser			
245	250	255	
Gly Arg Asp Pro Ala Ile Tyr Arg Ser Leu Gly Ser Gly Pro Pro Leu			
260	265	270	
Arg Thr Ala Gln Tyr Asn Ser Lys Trp Leu Asn Glu Pro Asn Phe Val			
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Ala Ala Tyr Asp Ile Gly Leu Phe Ala Tyr Phe Phe Leu Arg Glu Asn			
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Val Cys Lys Asn Asp Val Gly Gly Arg Phe Leu Leu Glu Asp Thr Trp			
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Thr Thr Phe Met Lys Ala Arg Leu Asn Cys Ser Arg Pro Gly Glu Val			
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Pro Phe Tyr Tyr Asn Glu Leu Gln Ser Ala Phe His Leu Pro Glu Gln			
355	360	365	
Asp Leu Ile Tyr Gly Val Phe Thr Thr Asn Val Asn Ser Ile Ala Ala			
370	375	380	
Ser Ala Val Cys Ala Phe Asn Leu Ser Ala Ile Ser Gln Ala Phe Asn			
385	390	395	400
Gly Pro Phe Arg Tyr Gln Glu Asn Pro Arg Ala Ala Trp Leu Pro Ile			
405	410	415	
Ala Asn Pro Ile Pro Asn Phe Gln Cys Gly Thr Leu Pro Glu Thr Gly			
420	425	430	
Pro Asn Glu Asn Leu Thr Glu Arg Ser Leu Gln Asp Ala Gln Arg Leu			
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Phe Leu Met Ser Glu Ala Val Gln Pro Val Thr Pro Glu Pro Cys Val			
450	455	460	
Thr Gln Asp Ser Val Arg Phe Ser His Leu Val Val Asp Leu Val Gln			
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Ala Lys Asp Thr Leu Tyr His Val Leu Tyr Ile Gly Thr Glu Ser Gly			
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Thr Ile Leu Lys Ala Leu Ser Thr Ala Ser Arg Ser Leu His Gly Cys			
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Tyr Leu Glu Glu Leu His Val Leu Pro Pro Gly Arg Arg Glu Pro Leu			

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Ser Gln Gly Ala Cys Leu Gly Ala Arg Asp Pro Tyr Cys Gly Trp Asp		
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Leu Trp Thr Gln Asn Ile Thr Ala Cys Pro Val Arg Asn Val Thr Arg		
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Asp Gly Gly Phe Gly Pro Trp Ser Pro Trp Gln Pro Cys Glu His Leu		
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Trp Ala Leu Cys Ser Thr Ser Cys Gly Ile Gly Phe Gln Val Arg Gln		
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Gly Cys Pro Glu Val Arg Arg Asn Thr Pro Trp Thr Pro Trp Leu Pro		
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Val Asn Val Thr Gln Gly Ala Arg Gln Glu Gln Arg Phe Arg Phe		
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Pro His Thr Val Ser Gly Gly Trp Ala Ala Trp Gly Pro Trp Ser Ser		
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Cys Ser Arg Asp Cys Glu Leu Gly Phe Arg Val Arg Lys Arg Thr Cys		
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Thr Asn Pro Glu Pro Arg Asn Gly Gly Leu Pro Cys Val Gly Asp Ala		
885	890	895
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Gly His Tyr Gln Arg Thr Arg Ser Cys Thr Ser Pro Ala Pro Ser Pro		
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Gly Glu Asp Ile Cys Leu Gly Leu His Thr Glu Glu Ala Leu Cys Ala		
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Cys Pro Tyr Ser Glu Ile Pro Gly Phe Asn Leu Ile His Leu Val Ala			
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Thr Gly Ile Ser Cys Phe Leu Gly Ser Gly Leu Leu Thr Leu Ala Val			
1025	1030	1035	1040
Tyr Leu Ser Cys Gln His Cys Gln Arg Gln Ser Gln Glu Ser Thr Leu			
1045	1050	1055	
Val His Pro Ala Thr Pro Asn His Leu His Tyr Lys Gly Gly Thr			
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Pro Lys Asn Glu Lys Tyr Thr Pro Met Glu Phe Lys Thr Leu Asn Lys			
1075	1080	1085	
Asn Asn Leu Ile Pro Asp Asp Arg Ala Asn Phe Tyr Pro Leu Gln Gln			
1090	1095	1100	
Thr Asn Val Tyr Thr Thr Tyr Tyr Pro Ser Pro Leu Asn Lys His			
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<212> DNA  
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<212> PRT  
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<400> 14

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Pro	Tyr	Asp	Pro	Arg	His	Asn	Ser	Thr	Ala	Val	Ile	Ser	Ser	Gln	Gly
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Glu	Leu	Tyr	Ala	Ala	Thr	Val	Ile	Asp	Phe	Ser	Gly	Arg	Asp	Pro	Ala
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Ile	Tyr	Arg	Ser	Leu	Gly	Ser	Gly	Pro	Pro	Leu	Arg	Thr	Ala	Gln	Tyr
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Asn	Ser	Lys	Trp	Leu	Asn	Glu	Pro	Asn	Phe	Val	Ala	Ala	Tyr	Asp	Ile
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Cys	Gly	Arg	Thr	Val	Tyr	Ser	Arg	Val	Ala	Arg	Val	Cys	Lys	Asn	Asp
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Val	Gly	Gly	Arg	Phe	Leu	Leu	Glu	Asp	Thr	Trp	Thr	Thr	Phe	Met	Lys
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Ala	Arg	Leu	Asn	Cys	Ser	Arg	Pro	Gly	Glu	Val	Pro	Phe	Tyr	Tyr	Asn
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Val	Phe	Thr	Thr	Asn	Val	Asn	Ser	Ile	Ala	Ala	Ser	Ala	Val	Cys	Ala
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Phe	Asn	Leu	Ser	Ala	Ile	Ser	Gln	Ala	Phe	Asn	Gly	Pro	Phe	Arg	Tyr
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Arg Phe Ser His Leu Val Val Asp Leu Val Gln	Ala Lys Asp Thr Leu		
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Tyr His Val Leu Tyr Ile Gly Thr Glu Ser Gly	Thr Ile Leu Lys Ala		
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Leu Ser Thr Ala Ser Arg Ser Leu His Gly Cys	Tyr Leu Glu Glu Leu		
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His Val Leu Pro Pro Gly Arg Arg Glu	Pro Leu Arg Ser Leu Arg Ile		
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Leu His Ser Ala Arg Ala Leu Phe Val Gly Leu	Arg Asp Gly Val Leu		
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Ser Arg Asn Gly Ala Trp Thr Pro Trp Ser	Ser Ser Trp Ala Leu Cys	Ser	
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Met Gln Ser Arg Arg Arg Ala Cys Glu Asn	Gly Asn Ser Cys Leu Gly		
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Gly Gly Ala Arg Gln Glu Gln Arg Phe Arg	Phe Thr Cys Arg Ala Pro		
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Leu Ala Asp Pro His Gly Leu Gln Phe Gly	Arg Arg Arg Thr Glu Thr		
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Arg Thr Cys Pro Ala Asp Gly Ser Gly	Ser Cys Asp Thr Asp Ala Leu		
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Val Glu Asp Leu Leu Arg Ser Gly Ser Thr	Ser Pro His Thr Val Ser		
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Gly Gly Trp Ala Ala Trp Gly Pro Trp Ser	Ser Cys Ser Arg Asp Cys		
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Glu Leu Gly Phe Arg Val Arg Lys Arg Thr	Cys Thr Asn Pro Glu Pro		

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Cys Asn Pro Gln Ala Cys Pro Val Arg	Gly Ala Trp Ser Cys Trp Thr	
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Ser Trp Ser Pro Cys Ser Ala Ser Cys	Gly Gly His Tyr Gln Arg	
725	730	735
Thr Arg Ser Cys Thr Ser Pro Ala Pro	Ser Pro Gly Glu Asp Ile Cys	
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Leu Gly Leu His Thr Glu Glu Ala	Leu Cys Ala Thr Gln Ala Cys Pro	
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785	790	795
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Ile Pro Val Ile Leu Pro Ala Ser	Ser Met Glu Glu Ala Thr Gly Cys	
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Leu Gly Ser Gly Leu Leu Thr	Leu Ala Val Tyr Leu Ser Cys Gln His	
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Cys Gln Arg Gln Ser Gln Glu	Ser Thr Leu Val His Pro Ala Thr Pro	
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Asn His Leu His Tyr Lys Gly	Gly Thr Pro Lys Asn Glu Lys Tyr	
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Thr Pro Met Glu Phe Lys Thr	Leu Asn Lys Asn Asn Leu Ile Pro Asp	
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Asp Arg Ala Asn Phe Tyr Pro	Leu Gln Gln Thr Asn Val Tyr Thr Thr	
915	920	925
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<212> DNA

<213> homo sapiens

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<213> homo sapiens

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Pro	Tyr	Asp	Pro	Arg	His	Asn	Ser	Thr	Ala	Val	Ile	Ser	Ser	Gln	Gly
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Glu	Leu	Tyr	Ala	Ala	Thr	Val	Ile	Asp	Phe	Ser	Gly	Arg	Asp	Pro	Ala
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Ile	Tyr	Arg	Ser	Leu	Gly	Ser	Gly	Pro	Pro	Leu	Arg	Thr	Ala	Gln	Tyr
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Asn	Ser	Lys	Trp	Leu	Asn	Glu	Pro	Asn	Phe	Val	Ala	Ala	Tyr	Asp	Ile
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Gly	Leu	Phe	Ala	Tyr	Phe	Phe	Leu	Arg	Glu	Asn	Ala	Val	Glu	His	Asp
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Cys	Gly	Arg	Thr	Val	Tyr	Ser	Arg	Val	Ala	Arg	Val	Cys	Lys	Asn	Asp
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 Asn Phe Gln Cys Gly Thr Leu Pro Glu Thr Gly Pro Asn Glu Asn Leu  
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 Thr Glu Arg Ser Leu Gln Asp Ala Gln Arg Leu Phe Leu Met Ser Glu  
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 Ala Val Gln Pro Val Thr Pro Glu Pro Cys Val Thr Gln Asp Ser Val  
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 Arg Phe Ser His Leu Val Val Asp Leu Val Gln Ala Lys Asp Thr Leu  
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 Tyr His Val Leu Tyr Ile Gly Thr Glu Ser Gly Thr Ile Leu Lys Ala  
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 Arg Val Pro Leu Glu Arg Cys Ala Ala Tyr Arg Ser Gln Gly Ala Cys  
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 Gly Ser Cys Leu Cys Arg Ala Arg Ser Cys Asp Ser Pro Arg Pro Arg  
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 Cys Gly Gly Leu Asp Cys Leu Gly Pro Ala Ile His Ile Ala Asn Cys  
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 Ser Arg Asn Gly Ala Trp Thr Pro Trp Ser Ser Trp Ala Leu Cys Ser  
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 Thr Ser Cys Gly Ile Gly Phe Gln Val Arg Gln Arg Ser Cys Ser Asn  
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 Pro Ala Pro Arg His Gly Gly Arg Ile Cys Val Gly Lys Ser Arg Glu  
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 Ala Ser Trp Gly Ser Trp Ser Lys Cys Ser Ser Asn Cys Gly Gly Gly  
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 Cys Gly Val Glu Phe Lys Thr Cys Asn Pro Glu Gly Cys Pro Glu Val  
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Arg Arg Asn Thr Pro Trp Thr Pro Trp Leu Pro Val Asn Val Thr Gln  
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 Arg Thr Cys Pro Ala Asp Gly Ser Gly Ser Cys Asp Thr Asp Ala Leu  
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 Val Glu Asp Leu Leu Arg Ser Gly Ser Thr Ser Pro His Thr Val Ser  
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 Gly Gly Trp Ala Ala Trp Gly Pro Trp Ser Ser Cys Ser Arg Asp Cys  
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 Glu Leu Gly Phe Arg Val Arg Lys Arg Thr Cys Thr Asn Pro Glu Pro  
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 Cys Asn Pro Gln Ala Cys Pro Val Arg Gly Ala Trp Ser Cys Trp Thr  
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 Ser Trp Ser Pro Cys Ser Ala Ser Cys Gly Gly His Tyr Gln Arg  
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 Thr Arg Ser Cys Thr Ser Pro Ala Pro Ser Pro Gly Glu Asp Ile Cys  
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 Phe Leu Gly Ser Gly Leu Leu Thr Leu Ala Val Tyr Leu Ser Cys Gln  
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 Pro Asn His Leu His Tyr Lys Gly Gly Thr Pro Lys Asn Glu Lys  
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 Tyr Thr Pro Met Glu Phe Lys Thr Leu Asn Lys Asn Asn Leu Ile Pro  
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 Asp Asp Arg Ala Asn Phe Tyr Pro Leu Gln Gln Thr Asn Val Tyr Thr  
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 Thr Thr Tyr Tyr Pro Ser Pro Leu Asn Lys His Ser Phe Arg Pro Glu  
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 <212> DNA  
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<212> DNA  
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<212> PRT  
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<400> 19  
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Thr Pro Arg Met Thr Ile Pro Tyr Glu Glu Leu Ser Gly Thr Arg His  
35 40 45  
Phe Lys Gly Gln Ala Gln Asn Tyr Ser Thr Leu Leu Glu Glu Ala  
50 55 60  
Ser Ala Arg Leu Leu Val Gly Ala Arg Gly Ala Leu Phe Ser Leu Ser  
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Ala Asn Asp Ile Gly Asp Gly Ala His Lys Glu Ile His Trp Glu Ala  
85 90 95  
Ser Pro Glu Met Gln Ser Lys Cys His Gln Lys Gly Lys Asn Asn Gln  
100 105 110  
Thr Glu Cys Phe Asn His Val Arg Phe Leu Gln Arg Leu Asn Ser Thr  
115 120 125  
His Leu Tyr Ala Cys Gly Thr His Ala Phe Gln Pro Leu Cys Ala Ala  
130 135 140  
Ile Asp Ala Glu Ala Phe Thr Leu Pro Thr Ser Phe Glu Glu Gly Lys  
145 150 155 160  
Glu Lys Cys Pro Tyr Asp Pro Ala Arg Gly Phe Thr Gly Leu Ile Ile

165	170	175
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Asp Ile Arg Arg Ser Arg His Pro His Ser Leu Arg Thr Glu Glu Thr		
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210	215	

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<211> 1491

<212> DNA

<213> homo sapiens

<400> 20

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<210> 21

<211> 496

<212> PRT

<213> homo sapiens

<400> 21

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Thr Pro Arg Met Thr Ile Pro Tyr Glu Glu Leu Ser Gly Thr Arg His			
35	40	45	
Phe Lys Gly Gln Ala Gln Asn Tyr Ser Thr Leu Leu Glu Glu Ala			
50	55	60	
Ser Ala Arg Leu Leu Val Gly Ala Arg Gly Ala Leu Phe Ser Leu Ser			
65	70	75	80

Ala Asn Asp Ile Gly Asp Gly Ala His Lys Glu Ile His Trp Glu Ala  
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 Ser Pro Glu Met Gln Ser Lys Cys His Gln Lys Gly Lys Asn Asn Gln  
                   100              105              110  
 Thr Glu Cys Phe Asn His Val Arg Phe Leu Gln Arg Leu Asn Ser Thr  
                   115              120              125  
 His Leu Tyr Ala Cys Gly Thr His Ala Phe Gln Pro Leu Cys Ala Ala  
                   130              135              140  
 Ile Asp Ala Glu Ala Phe Thr Leu Pro Thr Ser Phe Glu Glu Gly Lys  
                   145              150              155              160  
 Glu Lys Cys Pro Tyr Asp Pro Ala Arg Gly Phe Thr Gly Leu Ile Ile  
                   165              170              175  
 Asp Gly Gly Leu Tyr Thr Ala Thr Arg Tyr Glu Phe Arg Ser Ile Pro  
                   180              185              190  
 Asp Ile Arg Arg Ser Arg His Pro His Ser Leu Arg Thr Glu Glu Thr  
                   195              200              205  
 Pro Met His Trp Leu Asn Asp Ala Glu Phe Val Phe Ser Val Leu Val  
                   210              215              220  
 Arg Glu Ser Lys Ala Ser Ala Val Gly Asp Asp Lys Val Tyr Tyr  
                   225              230              235              240  
 Phe Phe Thr Glu Arg Ala Thr Glu Glu Gly Ser Gly Ser Phe Thr Gln  
                   245              250              255  
 Ser Arg Ser Ser His Arg Val Ala Arg Val Ala Arg Val Cys Lys Gly  
                   260              265              270  
 Asp Leu Gly Gly Lys Lys Ile Leu Gln Lys Lys Trp Thr Ser Phe Leu  
                   275              280              285  
 Lys Ala Arg Leu Ile Cys His Ile Pro Leu Tyr Glu Thr Leu Arg Gly  
                   290              295              300  
 Val Cys Ser Leu Asp Ala Glu Thr Ser Ser Arg Thr His Phe Tyr Ala  
                   305              310              315              320  
 Ala Phe Thr Leu Ser Thr Gln Trp Lys Thr Leu Glu Ala Ser Ala Ile  
                   325              330              335  
 Cys Arg Tyr Asp Leu Ala Glu Ile Gln Ala Val Phe Ala Gly Pro Tyr  
                   340              345              350  
 Met Glu Tyr Gln Asp Gly Ser Arg Arg Trp Gly Arg Tyr Glu Gly Gly  
                   355              360              365  
 Val Pro Glu Pro Arg Pro Gly Ser Cys Ile Thr Asp Ser Leu Arg Ser  
                   370              375              380  
 Gln Gly Tyr Asn Ser Ser Gln Asp Leu Pro Ser Leu Val Leu Asp Phe  
                   385              390              395              400  
 Val Lys Leu His Pro Leu Met Ala Arg Pro Val Val Pro Thr Arg Gly  
                   405              410              415  
 Arg Pro Leu Leu Leu Lys Arg Asn Ile Arg Tyr Thr His Leu Thr Gly  
                   420              425              430  
 Thr Pro Val Thr Thr Pro Ala Gly Pro Thr Tyr Asp Leu Leu Phe Leu  
                   435              440              445  
 Gly Thr Ala Asp Gly Trp Ile His Lys Ala Val Val Leu Gly Ser Gly  
                   450              455              460  
 Met His Ile Ile Glu Glu Thr Gln Val Phe Arg Glu Ser Gln Ser Val  
                   465              470              475              480  
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 <211> 2109  
 <212> DNA

<213> homo sapiens

<400> 22

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gaagagctct ctgggaccgg gcacttcaag ggccaagccc agaactactc aacactgctg	180
ctggaggagg ctcagcaag gctgctggg ggagcccgag gtgcctgtt ctctctcagt	240
gccaaacgaca taggagatgg ggctcacaaa gagatccact gggaaagcctc cccagagatg	300
caaagcaaata gtcataaaaa aggaaaaaac aaccagacgg agtgcttaa ccatgtgcgg	360
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<210> 23

<211> 702

<212> PRT

<213> homo sapiens

<400> 23

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Thr Pro Arg Met Thr Ile Pro Tyr Glu Glu Leu Ser Gly Thr Arg His			
35	40	45	
Phe Lys Gly Gln Ala Gln Asn Tyr Ser Thr Leu Leu Glu Glu Ala			
50	55	60	
Ser Ala Arg Leu Leu Val Gly Ala Arg Gly Ala Leu Phe Ser Leu Ser			
65	70	75	80

Ala Asn Asp Ile Gly Asp Gly Ala His Lys Glu Ile His Trp Glu Ala  
                   85                  90                  95  
 Ser Pro Glu Met Gln Ser Lys Cys His Gln Lys Gly Lys Asn Asn Gln  
                   100              105              110  
 Thr Glu Cys Phe Asn His Val Arg Phe Leu Gln Arg Leu Asn Ser Thr  
                   115              120              125  
 His Leu Tyr Ala Cys Gly Thr His Ala Phe Gln Pro Leu Cys Ala Ala  
                   130              135              140  
 Ile Asp Ala Glu Ala Phe Thr Leu Pro Thr Ser Phe Glu Glu Gly Lys  
                   145              150              155              160  
 Glu Lys Cys Pro Tyr Asp Pro Ala Arg Gly Phe Thr Gly Leu Ile Ile  
                   165              170              175  
 Asp Gly Gly Leu Tyr Thr Ala Thr Arg Tyr Glu Phe Arg Ser Ile Pro  
                   180              185              190  
 Asp Ile Arg Arg Ser Arg His Pro His Ser Leu Arg Thr Glu Glu Thr  
                   195              200              205  
 Pro Met His Trp Leu Asn Asp Ala Glu Phe Val Phe Ser Val Leu Val  
                   210              215              220  
 Arg Glu Ser Lys Ala Ser Ala Val Gly Asp Asp Lys Val Tyr Tyr  
                   225              230              235              240  
 Phe Phe Thr Glu Arg Ala Thr Glu Glu Gly Ser Gly Ser Phe Thr Gln  
                   245              250              255  
 Ser Arg Ser Ser His Arg Val Ala Arg Val Ala Arg Val Cys Lys Gly  
                   260              265              270  
 Asp Leu Gly Gly Lys Lys Ile Leu Gln Lys Lys Trp Thr Ser Phe Leu  
                   275              280              285  
 Lys Ala Arg Leu Ile Cys His Ile Pro Leu Tyr Glu Thr Leu Arg Gly  
                   290              295              300  
 Val Cys Ser Leu Asp Ala Glu Thr Ser Ser Arg Thr His Phe Tyr Ala  
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 Ala Phe Thr Leu Ser Thr Gln Trp Lys Thr Leu Glu Ala Ser Ala Ile  
                   325              330              335  
 Cys Arg Tyr Asp Leu Ala Glu Ile Gln Ala Val Phe Ala Gly Pro Tyr  
                   340              345              350  
 Met Glu Tyr Gln Asp Gly Ser Arg Arg Trp Gly Arg Tyr Glu Gly Gly  
                   355              360              365  
 Val Pro Glu Pro Arg Pro Gly Ser Cys Ile Thr Asp Ser Leu Arg Ser  
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 Gln Gly Tyr Asn Ser Ser Gln Asp Leu Pro Ser Leu Val Leu Asp Phe  
                   385              390              395              400  
 Val Lys Leu His Pro Leu Met Ala Arg Pro Val Val Pro Thr Arg Gly  
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 Arg Pro Leu Leu Lys Arg Asn Ile Arg Tyr Thr His Leu Thr Gly  
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 Thr Pro Val Thr Thr Pro Ala Gly Pro Thr Tyr Asp Leu Leu Phe Leu  
                   435              440              445  
 Gly Thr Ala Asp Gly Trp Ile His Lys Ala Val Val Leu Gly Ser Gly  
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 Met His Ile Ile Glu Glu Thr Gln Val Phe Arg Glu Ser Gln Ser Val  
                   465              470              475              480  
 Glu Asn Leu Val Ile Ser Leu Leu Gln His Ser Leu Tyr Val Gly Ala  
                   485              490              495  
 Pro Ser Gly Val Ile Gln Leu Pro Leu Ser Ser Cys Ser Arg Tyr Arg  
                   500              505              510  
 Ser Cys Tyr Asp Cys Ile Leu Ala Arg Asp Pro Tyr Cys Gly Trp Asp  
                   515              520              525

Pro	Gly	Thr	His	Ala	Cys	Ala	Ala	Ala	Thr	Thr	Ile	Ala	Asn	Arg	Ser
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Gln	Gly	Ser	Arg	Thr	Ala	Leu	Ile	Gln	Asp	Ile	Glu	Arg	Gly	Asn	Arg
545					550			555				560			
Gly	Cys	Glu	Ser	Ser	Arg	Asp	Thr	Gly	Arg	Ala	Leu	Gln	Val	His	Met
	565					570						575			
Gly	Ser	Met	Ser	Pro	Pro	Ser	Ala	Trp	Pro	Cys	Val	Leu	Asp	Gly	Pro
	580					585						590			
Glu	Thr	Arg	Gln	Val	Leu	Cys	Gln	Pro	Pro	Lys	Pro	Cys	Val	His	Ser
	595					600				605					
His	Ala	His	Met	Glu	Glu	Cys	Leu	Ser	Ala	Gly	Leu	Gln	Cys	Pro	His
610						615				620					
Pro	His	Leu	Leu	Leu	Val	His	Ser	Cys	Phe	Ile	Pro	Ala	Ser	Gly	Leu
625						630			635			640			
Gly	Val	Pro	Ser	Gln	Leu	Pro	His	Pro	Ile	Trp	Ser	Ser	Ser	Pro	Ala
	645					650						655			
Pro	Cys	Gly	Asp	Leu	Phe	Val	Lys	Ser	Leu	Gly	Thr	Gly	Gln	Pro	Gly
	660					665				670					
Glu	Val	Arg	Leu	His	His	Ser	Pro	Pro	Leu	Pro	Ser	Cys	Val	Ala	Leu
	675					680				685					
Val	Asn	Gln	Pro	Pro	His	Ser	Pro	Trp	Ser	Phe	Ser	Arg	Val		
	690					695				700					

<210> 24

<211> 2094

<212> DNA

<213> homo sapiens

<400> 24

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gaagagctct	ctgggaccccg	gcacttcaag	ggccaagccc	agaactactc	aacactgctg	180
ctggaggagg	cctcagcaag	gctgctggtg	ggagcccgag	gtgccctgtt	ctctctcagt	240
gccaacgaca	taggagatgg	ggctcacaaa	gagatccact	ggaaagcctc	cccagagatg	300
caaagcaaat	gtcatcaaaa	agggaaaaac	aaccagacgg	agtgcattaa	ccatgtgcgg	360
ttcctgcagc	ggctcaattc	tacccaccc	tatgcatgt	ggactcacgc	cttccagccc	420
ctctgtgcag	ccatttatgc	tgaggccttc	accttgccaa	ccagcttcga	ggaggggaag	480
gagaagtgtc	tttatgaccc	agccccgtggc	ttcacaggcc	tcatcattga	tggaggcctc	540
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<210> 25

<211> 697

<212> PRT

<213> homo sapiens

<400> 25

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Thr Pro Arg Met Thr Ile Pro Tyr Glu Glu Leu Ser Gly Thr Arg His	
35 40 45	
Phe Lys Gly Gln Ala Gln Asn Tyr Ser Thr Leu Leu Glu Glu Ala	
50 55 60	
Ser Ala Arg Leu Leu Val Gly Ala Arg Gly Ala Leu Phe Ser Leu Ser	
65 70 75 80	
Ala Asn Asp Ile Gly Asp Gly Ala His Lys Glu Ile His Trp Glu Ala	
85 90 95	
Ser Pro Glu Met Gln Ser Lys Cys His Gln Lys Gly Lys Asn Asn Gln	
100 105 110	
Thr Glu Cys Phe Asn His Val Arg Phe Leu Gln Arg Leu Asn Ser Thr	
115 120 125	
His Leu Tyr Ala Cys Gly Thr His Ala Phe Gln Pro Leu Cys Ala Ala	
130 135 140	
Ile Asp Ala Glu Ala Phe Thr Leu Pro Thr Ser Phe Glu Glu Gly Lys	
145 150 155 160	
Glu Lys Cys Pro Tyr Asp Pro Ala Arg Gly Phe Thr Gly Leu Ile Ile	
165 170 175	
Asp Gly Gly Leu Tyr Thr Ala Thr Arg Tyr Glu Phe Arg Ser Ile Pro	
180 185 190	
Asp Ile Arg Arg Ser Arg His Pro His Ser Leu Arg Thr Glu Glu Thr	
195 200 205	
Pro Met His Trp Leu Asn Asp Ala Glu Phe Val Phe Ser Val Leu Val	
210 215 220	
Arg Glu Ser Lys Ala Ser Ala Val Gly Asp Asp Lys Val Tyr Tyr	
225 230 235 240	
Phe Phe Thr Glu Arg Ala Thr Glu Glu Gly Ser Gly Ser Phe Thr Gln	
245 250 255	
Ser Arg Ser Ser His Arg Val Ala Arg Val Ala Arg Val Cys Lys Gly	
260 265 270	
Asp Leu Gly Gly Lys Lys Ile Leu Gln Lys Trp Thr Ser Phe Leu	
275 280 285	
Lys Ala Arg Leu Ile Cys His Ile Pro Leu Tyr Glu Thr Leu Arg Gly	
290 295 300	
Val Cys Ser Leu Asp Ala Glu Thr Ser Ser Arg Thr His Phe Tyr Ala	
305 310 315 320	
Ala Phe Thr Leu Ser Thr Gln Trp Lys Thr Leu Glu Ala Ser Ala Ile	

325	330	335
Cys Arg Tyr Asp Leu Ala Glu Ile Gln Ala Val Phe Ala Gly Pro Tyr		
340	345	350
Met Glu Tyr Gln Asp Gly Ser Arg Arg Trp Gly Arg Tyr Glu Gly Gly		
355	360	365
Val Pro Glu Pro Arg Pro Gly Ser Cys Ile Thr Asp Ser Leu Arg Ser		
370	375	380
Gln Gly Tyr Asn Ser Ser Gln Asp Leu Pro Ser Leu Val Leu Asp Phe		
385	390	395
Val Lys Leu His Pro Leu Met Ala Arg Pro Val Val Pro Thr Arg Gly		
405	410	415
Arg Pro Leu Leu Leu Lys Arg Asn Ile Arg Tyr Thr His Leu Thr Gly		
420	425	430
Thr Pro Val Thr Thr Pro Ala Gly Pro Thr Tyr Asp Leu Leu Phe Leu		
435	440	445
Gly Thr Ala Asp Gly Trp Ile His Lys Ala Val Val Leu Gly Ser Gly		
450	455	460
Met His Ile Ile Glu Glu Thr Gln Val Phe Arg Glu Ser Gln Ser Val		
465	470	475
Glu Asn Leu Val Ile Ser Leu Leu Gln His Ser Leu Tyr Val Gly Ala		
485	490	495
Pro Ser Gly Val Ile Gln Leu Pro Leu Ser Ser Cys Ser Arg Tyr Arg		
500	505	510
Ser Cys Tyr Asp Cys Ile Leu Ala Arg Asp Pro Tyr Cys Gly Trp Asp		
515	520	525
Pro Gly Thr His Ala Cys Ala Ala Ala Thr Thr Ile Ala Asn Arg Thr		
530	535	540
Ala Leu Ile Gln Asp Ile Glu Arg Gly Asn Arg Gly Cys Glu Ser Ser		
545	550	555
Arg Asp Thr Gly Arg Ala Leu Gln Val His Met Gly Ser Met Ser Pro		
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Pro Ser Ala Trp Pro Cys Val Leu Asp Gly Pro Glu Thr Arg Gln Val		
580	585	590
Leu Cys Gln Pro Pro Lys Pro Cys Val His Ser His Ala His Met Glu		
595	600	605
Glu Cys Leu Ser Ala Gly Leu Gln Cys Pro His Pro His Leu Leu Leu		
610	615	620
Val His Ser Cys Phe Ile Pro Ala Ser Gly Leu Gly Val Pro Ser Gln		
625	630	635
Leu Pro His Pro Ile Trp Ser Ser Ser Pro Ala Pro Cys Gly Asp Leu		
645	650	655
Phe Val Lys Ser Leu Gly Thr Gly Gln Pro Gly Glu Val Arg Leu His		
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His Ser Pro Pro Leu Pro Ser Cys Val Ala Leu Val Asn Gln Pro Pro		
675	680	685
His Ser Pro Trp Ser Phe Ser Arg Val		
690	695	

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<211> 2532  
<212> DNA  
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120

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<400> 27

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Thr	Pro	Arg	Met	Thr	Ile	Pro	Tyr	Glu	Glu	Leu	Ser	Gly	Thr	Arg	His
			35				40					45			
Phe	Lys	Gly	Gln	Ala	Gln	Asn	Tyr	Ser	Thr	Leu	Leu	Glu	Glu	Ala	
				50			55					60			

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 Ala Asn Asp Ile Gly Asp Gly Ala His Lys Glu Ile His Trp Glu Ala  
   85 90 95  
 Ser Pro Glu Met Gln Ser Lys Cys His Gln Lys Gly Lys Asn Asn Gln  
   100 105 110  
 Thr Glu Cys Phe Asn His Val Arg Phe Leu Gln Arg Leu Asn Ser Thr  
   115 120 125  
 His Leu Tyr Ala Cys Gly Thr His Ala Phe Gln Pro Leu Cys Ala Ala  
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 Ile Asp Ala Glu Ala Phe Thr Leu Pro Thr Ser Phe Glu Glu Gly Lys  
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 Glu Lys Cys Pro Tyr Asp Pro Ala Arg Gly Phe Thr Gly Leu Ile Ile  
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 Asp Gly Gly Leu Tyr Thr Ala Thr Arg Tyr Glu Phe Arg Ser Ile Pro  
   180 185 190  
 Asp Ile Arg Arg Ser Arg His Pro His Ser Leu Arg Thr Glu Glu Thr  
   195 200 205  
 Pro Met His Trp Leu Asn Asp Ala Glu Phe Val Phe Ser Val Leu Val  
   210 215 220  
 Arg Glu Ser Lys Ala Ser Ala Val Gly Asp Asp Asp Lys Val Tyr Tyr  
 225 230 235 240  
 Phe Phe Thr Glu Arg Ala Thr Glu Glu Gly Ser Gly Ser Phe Thr Gln  
   245 250 255  
 Ser Arg Ser Ser His Arg Val Ala Arg Val Ala Arg Val Cys Lys Gly  
   260 265 270  
 Asp Leu Gly Gly Lys Lys Ile Leu Gln Lys Lys Trp Thr Ser Phe Leu  
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 Lys Ala Arg Leu Ile Cys His Ile Pro Leu Tyr Glu Thr Leu Arg Gly  
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 Val Cys Ser Leu Asp Ala Glu Thr Ser Ser Arg Thr His Phe Tyr Ala  
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 Met Glu Tyr Gln Asp Gly Ser Arg Arg Trp Gly Arg Tyr Glu Gly Gly  
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 Val Pro Glu Pro Arg Pro Gly Ser Cys Ile Thr Asp Ser Leu Arg Ser  
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 Gln Gly Tyr Asn Ser Ser Gln Asp Leu Pro Ser Leu Val Leu Asp Phe  
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 Gly Thr Ala Asp Gly Trp Ile His Lys Ala Val Val Leu Gly Ser Gly  
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 Glu Asn Leu Val Ile Ser Leu Leu Gln His Ser Leu Tyr Val Gly Ala  
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 Pro Ser Gly Val Ile Gln Leu Pro Leu Ser Ser Cys Ser Arg Tyr Arg  
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           675              680              685  
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 Ala Pro Pro Pro Pro Pro Pro Pro Pro Ala Glu Leu Thr Asn  
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 Tyr Val Leu Leu Arg Gln Ser Asn Asn Gly Val Pro Ala Gly Pro Cys  
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 Ser Phe Ala Glu Glu Leu Ser Arg Ile Leu Glu Lys Arg Lys His Thr  
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35 40 45
Phe Lys Gly Gln Ala Gln Asn Tyr Ser Thr Leu Leu Glu Glu Ala
50 55 60
Ser Ala Arg Leu Leu Val Gly Ala Arg Gly Ala Leu Phe Ser Leu Ser
65 70 75 80
Ala Asn Asp Ile Gly Asp Gly Ala His Lys Glu Ile His Trp Glu Ala
85 90 95
Ser Pro Glu Met Gln Ser Lys Cys His Gln Lys Gly Lys Asn Asn Gln
100 105 110

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 Glu Lys Cys Pro Tyr Asp Pro Ala Arg Gly Phe Thr Gly Leu Ile Ile  
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 Asp Gly Gly Leu Tyr Thr Ala Thr Arg Tyr Glu Phe Arg Ser Ile Pro  
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 Phe Phe Thr Glu Arg Ala Thr Glu Glu Gly Ser Gly Ser Phe Thr Gln  
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 Asp Leu Gly Gly Lys Lys Ile Leu Gln Lys Lys Trp Thr Ser Phe Leu  
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 Lys Ala Arg Leu Ile Cys His Ile Pro Leu Tyr Glu Thr Leu Arg Gly  
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 Val Cys Ser Leu Asp Ala Glu Thr Ser Ser Arg Thr His Phe Tyr Ala  
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 Cys Arg Tyr Asp Leu Ala Glu Ile Gln Ala Val Phe Ala Gly Pro Tyr  
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 Val Lys Leu His Pro Leu Met Ala Arg Pro Val Val Pro Thr Arg Gly  
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 Arg Pro Leu Leu Leu Lys Arg Asn Ile Arg Tyr Thr His Leu Thr Gly  
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 Thr Pro Val Thr Thr Pro Ala Gly Pro Thr Tyr Asp Leu Leu Phe Leu  
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 Pro Ser Gly Val Ile Gln Leu Pro Leu Ser Ser Cys Ser Arg Tyr Arg  
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 Ala Leu Ile Gln Asp Ile Glu Arg Gly Asn Arg Gly Cys Glu Ser Ser  
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Arg Asp Thr Gly Pro Pro Pro Pro Leu Lys Thr Arg Ser Val Leu Arg  
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 Gly Asp Asp Val Leu Leu Pro Cys Asp Gln Pro Ser Asn Leu Ala Arg  
 580 585 590  
 Ala Leu Trp Leu Leu Asn Gly Ser Met Gly Leu Ser Asp Gly Gln Gly  
 595 600 605  
 Gly Tyr Arg Val Gly Val Asp Gly Leu Leu Val Thr Asp Ala Gln Pro  
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 Glu His Ser Gly Asn Tyr Gly Cys Tyr Ala Glu Glu Asn Gly Leu Arg  
 625 630 635 640  
 Thr Leu Leu Ala Ser Tyr Ser Leu Thr Val Arg Pro Ala Thr Pro Ala  
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 Pro Ala Pro Lys Ala Pro Ala Thr Pro Gly Ala Gln Leu Ala Pro Asp  
 660 665 670  
 Val Arg Leu Leu Tyr Val Leu Ala Ile Ala Ala Leu Gly Gly Leu Cys  
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 Arg Arg Gly Arg Arg Arg Lys Tyr Ser Leu Gly Arg Ala Ser Arg Ala  
 705 710 715 720  
 Gly Gly Ser Ala Val Gln Leu Gln Thr Val Ser Gly Gln Cys Pro Gly  
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 Glu Glu Asp Glu Gly Asp Asp Glu Gly Ala Gly Gly Leu Glu Gly Ser  
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 Cys Leu Gln Ile Ile Pro Gly Glu Gly Ala Pro Ala Pro Pro Pro Pro  
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 Pro Pro Pro Pro Pro Ala Glu Leu Thr Asn Gly Leu Val Ala Leu  
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 Pro Ser Arg Leu Arg Arg Met Asn Gly Asn Ser Tyr Val Leu Leu Arg  
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 Gln Ser Asn Asn Gly Val Pro Ala Gly Pro Cys Ser Phe Ala Glu Glu  
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 Thr Pro Arg Met Thr Ile Pro Tyr Glu Glu Leu Ser Gly Thr Arg His  
 35 40 45  
 Phe Lys Gly Gln Ala Gln Asn Tyr Ser Thr Leu Leu Glu Glu Ala  
 50 55 60  
 Ser Ala Arg Leu Leu Val Gly Ala Arg Gly Ala Leu Phe Ser Leu Ser  
 65 70 75 80  
 Ala Asn Asp Ile Gly Asp Gly Ala His Lys Glu Ile His Trp Glu Ala  
 85 90 95  
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 Thr Glu Cys Phe Asn His Val Arg Phe Leu Gln Arg Leu Asn Ser Thr  
 115 120 125  
 His Leu Tyr Ala Cys Gly Thr His Ala Phe Gln Pro Leu Cys Ala Ala  
 130 135 140

Ile Asp Ala Glu Ala Phe Thr Leu Pro Thr Ser Phe Glu Glu Gly Lys  
 145 150 155 160  
 Glu Lys Cys Pro Tyr Asp Pro Ala Arg Gly Phe Thr Gly Leu Ile Ile  
 165 170 175  
 Asp Gly Gly Leu Tyr Thr Ala Thr Arg Tyr Glu Phe Arg Ser Ile Pro  
 180 185 190  
 Asp Ile Arg Arg Ser Arg His Pro His Ser Leu Arg Thr Glu Glu Thr  
 195 200 205  
 Pro Met His Trp Leu Asn Asp Ala Glu Phe Val Phe Ser Val Leu Val  
 210 215 220  
 Arg Glu Ser Lys Ala Ser Ala Val Gly Asp Asp Lys Val Tyr Tyr  
 225 230 235 240  
 Phe Phe Thr Glu Arg Ala Thr Glu Glu Gly Ser Gly Ser Phe Thr Gln  
 245 250 255  
 Ser Arg Ser Ser His Arg Val Ala Arg Val Ala Arg Val Cys Lys Gly  
 260 265 270  
 Asp Leu Gly Gly Lys Ile Leu Gln Lys Lys Trp Thr Ser Phe Leu  
 275 280 285  
 Lys Ala Arg Leu Ile Cys His Ile Pro Leu Tyr Glu Thr Leu Arg Gly  
 290 295 300  
 Val Cys Ser Leu Asp Ala Glu Thr Ser Arg Thr His Phe Tyr Ala  
 305 310 315 320  
 Ala Phe Thr Leu Ser Thr Gln Trp Lys Thr Leu Glu Ala Ser Ala Ile  
 325 330 335  
 Cys Arg Tyr Asp Leu Ala Glu Ile Gln Ala Val Phe Ala Gly Pro Tyr  
 340 345 350  
 Met Glu Tyr Gln Asp Gly Ser Arg Arg Trp Gly Arg Tyr Glu Gly Gly  
 355 360 365  
 Val Pro Glu Pro Arg Pro Gly Ser Cys Ile Thr Asp Ser Leu Arg Ser  
 370 375 380  
 Gln Gly Tyr Asn Ser Ser Gln Asp Leu Pro Ser Leu Val Leu Asp Phe  
 385 390 395 400  
 Val Lys Leu His Pro Leu Met Ala Arg Pro Val Val Pro Thr Arg Gly  
 405 410 415  
 Arg Pro Leu Leu Lys Arg Asn Ile Arg Tyr Thr His Leu Thr Gly  
 420 425 430  
 Thr Pro Val Thr Pro Ala Gly Pro Thr Tyr Asp Leu Leu Phe Leu  
 435 440 445  
 Gly Thr Ala Asp Gly Trp Ile His Lys Ala Val Val Leu Gly Ser Gly  
 450 455 460  
 Met His Ile Ile Glu Glu Thr Gln Val Phe Arg Glu Ser Gln Ser Val  
 465 470 475 480  
 Glu Asn Leu Val Ile Ser Leu Leu Gln His Ser Leu Tyr Val Gly Ala  
 485 490 495  
 Pro Ser Gly Val Ile Gln Leu Pro Leu Ser Ser Cys Ser Arg Tyr Arg  
 500 505 510  
 Ser Cys Tyr Asp Cys Ile Leu Ala Arg Asp Pro Tyr Cys Gly Trp Asp  
 515 520 525  
 Pro Gly Thr His Ala Cys Ala Ala Ala Thr Thr Ile Ala Asn Arg Ser  
 530 535 540  
 Gln Gly Ser Arg Thr Ala Leu Ile Gln Asp Ile Glu Arg Gly Asn Arg  
 545 550 555 560  
 Gly Cys Glu Ser Ser Arg Asp Thr Gly Pro Pro Pro Pro Leu Lys Thr  
 565 570 575  
 Arg Ser Val Leu Arg Gly Asp Asp Val Leu Leu Pro Cys Asp Gln Pro  
 580 585 590

Ser Asn Leu Ala Arg Ala Leu Trp Leu Leu Asn Gly Ser Met Gly Leu  
       595                  600                  605  
 Ser Asp Gly Gln Gly Gly Tyr Arg Val Gly Val Asp Gly Leu Leu Val  
       610                  615                  620  
 Thr Asp Ala Gln Pro Glu His Ser Gly Asn Tyr Gly Cys Tyr Ala Glu  
       625                  630                  635                  640  
 Glu Asn Gly Leu Arg Thr Leu Leu Ala Ser Tyr Ser Leu Thr Val Arg  
       645                  650                  655  
 Pro Ala Thr Pro Ala Pro Ala Pro Lys Ala Pro Ala Thr Pro Gly Ala  
       660                  665                  670  
 Gln Leu Ala Pro Asp Val Arg Leu Leu Tyr Val Leu Ala Ile Ala Ala  
       675                  680                  685  
 Leu Gly Gly Leu Cys Leu Ile Leu Ala Ser Ser Leu Leu Tyr Val Ala  
       690                  695                  700  
 Cys Leu Arg Glu Gly Arg Arg Gly Arg Arg Arg Lys Tyr Ser Leu Gly  
       705                  710                  715                  720  
 Arg Ala Ser Arg Ala Gly Gly Ser Ala Val Gln Leu Gln Thr Val Ser  
       725                  730                  735  
 Gly Arg Ala Leu Gln Val His Met Gly Ser Met Ser Pro Pro Ser Ala  
       740                  745                  750  
 Trp Pro Cys Val Leu Asp Gly Pro Glu Thr Arg Gln Val Leu Cys Gln  
       755                  760                  765  
 Pro Pro Lys Pro Cys Val His Ser His Ala His Met Glu Glu Cys Leu  
       770                  775                  780  
 Ser Ala Gly Leu Gln Cys Pro His Pro His Leu Leu Leu Val His Ser  
       785                  790                  795                  800  
 Cys Phe Ile Pro Ala Ser Gly Leu Gly Val Pro Ser Gln Leu Pro His  
       805                  810                  815  
 Pro Ile Trp Ser Ser Pro Ala Pro Cys Gly Asp Leu Phe Val Lys  
       820                  825                  830  
 Ser Leu Gly Thr Gly Gln Pro Gly Glu Val Arg Leu His His Ser Pro  
       835                  840                  845  
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<210> 32  
 <211> 2598  
 <212> DNA  
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 gaagagctct ctgggaccccg gcacttcaag ggccaagccc agaactactc aacactgctg 180  
 ctggaggagg cctcagcaag gctgctggtg ggagccc gag gtgccctgtt ctctctcagt 240  
 gccaacgaca taggagatgg ggctcacaaa gagatccact gggaaagcctc cccagagatg 300  
 caaaagcaaat gtcataaaaa aggaaaaaac aaccagacgg agtgctttaa ccatgtgcgg 360  
 ttcctgcagc ggctcaattc tacccacctc tatgcatgtg ggactcacgc cttccagccc 420  
 ctctgtgcag ccattgatgc tgaggccttc accttgccaa ccagcttcga ggaggggaag 480  
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 cactccctga gaactgagga gacaccaatg cattggctca atgatgcgg a gtttgtttc 660  
 tccgtcctcg tgcggagag caaggccagt gcagtgggtg atgatgacaa ggtgtactac 720  
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caccgtgtgg cccgtgtggc tcgygtctgc aaggagacc tgggaggaa gaagatcctg 840  
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 acactgcgtg gggctctcgag cctggatgct gaaacctcaa gccgtacaca cttctatgca 960  
 gccttcacgc tgagcacaca gtggaaagacc ctggaggcct cagccatctg ccgctatgac 1020  
 ctggcagaga tccaggctgt cttgcagga ccctatatgg aataccagga tggcccgg 1080  
 cgctgggtc gctatgaggg tgggtgcct gagccccgc ctggctcgt tatcacagat 1140  
 tcattgcgc gccaaggcta caattcatcc caagacttgc catcccttgt cctggacttt 1200  
 gtaaagtgc acccactgt ggctggccc gttgtgccta cacgtggacg gcccctgctg 1260  
 ctcaagcgc aacatacgcta cacacaccc acagggacac ctgtcaccac gcctgctgga 1320  
 cctacctatg acctgctctt tctgggcaca gctgatggct ggatccacaa gcccgtagtc 1380  
 ctggcctctg ggatgcacat tattgaagag acacaagtgt tcagggagtc ccagtctgtg 1440  
 gaaaatctag tcatctctt attgcagcac agcctctatg tggggctcc tagcggagtc 1500  
 atccagctac cactctccag ctgctccgc taccgatct gctatgactg catcttggcc 1560  
 cgagacccct actgtggctg ggaccctggc acccatgcct gcgcagcagc caccaccata 1620  
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 atgggcctga gcgatggca gggctgctac cgtgtggcg tggacggct gctggttaca 1860  
 gatgcacagc ctgagcacag tggcaactat ggctgctatg ccgaggaaaa tggcctccgc 1920  
 accctgctgg cctcctatag tctcacagtc cggccagcca ctccctcccc agctccaaaa 1980  
 gcccctgcctt caccctggc acagctggca cctgatgtga gactgctcta tggctagcc 2040  
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 ctctgccagc cacctaagcc ctgcgtacat tcacatgcac acatggaa atgttatcg 2340  
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 tctggacttg gggtaaccctc ccaattgcca catcctatct gtcctcttc cccagcccca 2460  
 tgggtgacc tctttgtcaa gagcttggga acggccagc ctggggaggt aagactgcat 2520  
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 <211> 865  
 <212> PRT  
 <213> homo sapiens

<400> 33  
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 Ala Val Pro Gly Pro Ser Leu Arg Arg Pro Ser Arg Glu Leu Asp Ala  
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 Thr Pro Arg Met Thr Ile Pro Tyr Glu Glu Leu Ser Gly Thr Arg His  
 35 40 45  
 Phe Lys Gly Gln Ala Gln Asn Tyr Ser Thr Leu Leu Glu Glu Ala  
 50 55 60  
 Ser Ala Arg Leu Leu Val Gly Ala Arg Gly Ala Leu Phe Ser Leu Ser  
 65 70 75 80  
 Ala Asn Asp Ile Gly Asp Gly Ala His Lys Glu Ile His Trp Glu Ala  
 85 90 95  
 Ser Pro Glu Met Gln Ser Lys Cys His Gln Lys Gly Lys Asn Asn Gln  
 100 105 110  
 Thr Glu Cys Phe Asn His Val Arg Phe Leu Gln Arg Leu Asn Ser Thr  
 115 120 125  
 His Leu Tyr Ala Cys Gly Thr His Ala Phe Gln Pro Leu Cys Ala Ala  
 130 135 140

Ile	Asp	Ala	Glu	Ala	Phe	Thr	Leu	Pro	Thr	Ser	Phe	Glu	Glu	Gly	Lys
145					150					155					160
Glu	Lys	Cys	Pro	Tyr	Asp	Pro	Ala	Arg	Gly	Phe	Thr	Gly	Leu	Ile	Ile
					165				170					175	
Asp	Gly	Gly	Leu	Tyr	Thr	Ala	Thr	Arg	Tyr	Glu	Phe	Arg	Ser	Ile	Pro
					180				185					190	
Asp	Ile	Arg	Arg	Ser	Arg	His	Pro	His	Ser	Leu	Arg	Thr	Glu	Glu	Thr
					195				200					205	
Pro	Met	His	Trp	Leu	Asn	Asp	Ala	Glu	Phe	Val	Phe	Ser	Val	Leu	Val
					210				215					220	
Arg	Glu	Ser	Lys	Ala	Ser	Ala	Val	Gly	Asp	Asp	Asp	Lys	Val	Tyr	Tyr
					225				230			235			240
Phe	Phe	Thr	Glu	Arg	Ala	Thr	Glu	Glu	Gly	Ser	Gly	Ser	Phe	Thr	Gln
					245				250					255	
Ser	Arg	Ser	Ser	His	Arg	Val	Ala	Arg	Val	Ala	Arg	Val	Cys	Lys	Gly
					260				265				270		
Asp	Leu	Gly	Gly	Lys	Lys	Ile	Leu	Gln	Lys	Lys	Trp	Thr	Ser	Phe	Leu
					275				280					285	
Lys	Ala	Arg	Leu	Ile	Cys	His	Ile	Pro	Leu	Tyr	Glu	Thr	Leu	Arg	Gly
					290				295					300	
Val	Cys	Ser	Leu	Asp	Ala	Glu	Thr	Ser	Ser	Arg	Thr	His	Phe	Tyr	Ala
					305				310			315			320
Ala	Phe	Thr	Leu	Ser	Thr	Gln	Trp	Lys	Thr	Leu	Glu	Ala	Ser	Ala	Ile
					325				330					335	
Cys	Arg	Tyr	Asp	Leu	Ala	Glu	Ile	Gln	Ala	Val	Phe	Ala	Gly	Pro	Tyr
					340				345					350	
Met	Glu	Tyr	Gln	Asp	Gly	Ser	Arg	Arg	Trp	Gly	Arg	Tyr	Glu	Gly	Gly
					355				360					365	
Val	Pro	Glu	Pro	Arg	Pro	Gly	Ser	Cys	Ile	Thr	Asp	Ser	Leu	Arg	Ser
					370				375					380	
Gln	Gly	Tyr	Asn	Ser	Ser	Gln	Asp	Leu	Pro	Ser	Leu	Val	Leu	Asp	Phe
					385				390			395			400
Val	Lys	Leu	His	Pro	Leu	Met	Ala	Arg	Pro	Val	Val	Pro	Thr	Arg	Gly
					405				410					415	
Arg	Pro	Leu	Leu	Leu	Lys	Arg	Asn	Ile	Arg	Tyr	Thr	His	Leu	Thr	Gly
					420				425					430	
Thr	Pro	Val	Thr	Thr	Pro	Ala	Gly	Pro	Thr	Tyr	Asp	Leu	Leu	Phe	Leu
					435				440					445	
Gly	Thr	Ala	Asp	Gly	Trp	Ile	His	Lys	Ala	Val	Val	Leu	Gly	Ser	Gly
					450				455					460	
Met	His	Ile	Ile	Glu	Glu	Thr	Gln	Val	Phe	Arg	Glu	Ser	Gln	Ser	Val
					465				470			475			480
Glu	Asn	Leu	Val	Ile	Ser	Leu	Leu	Gln	His	Ser	Leu	Tyr	Val	Gly	Ala
					485				490					495	
Pro	Ser	Gly	Val	Ile	Gln	Leu	Pro	Leu	Ser	Ser	Cys	Ser	Arg	Tyr	Arg
					500				505					510	
Ser	Cys	Tyr	Asp	Cys	Ile	Leu	Ala	Arg	Asp	Pro	Tyr	Cys	Gly	Trp	Asp
					515				520					525	
Pro	Gly	Thr	His	Ala	Cys	Ala	Ala	Ala	Thr	Thr	Ile	Ala	Asn	Arg	Thr
					530				535					540	
Ala	Leu	Ile	Gln	Asp	Ile	Glu	Arg	Gly	Asn	Arg	Gly	Cys	Glu	Ser	Ser
					545				550			555			560
Arg	Asp	Thr	Gly	Pro	Pro	Pro	Leu	Lys	Thr	Arg	Ser	Val	Leu	Arg	
					565				570					575	
Gly	Asp	Asp	Val	Leu	Leu	Pro	Cys	Asp	Gln	Pro	Ser	Asn	Leu	Ala	Arg
					580				585					590	

Ala Leu Trp Leu Leu Asn Gly Ser Met Gly Leu Ser Asp Gly Gln Gly  
               595                  600                  605  
 Gly Tyr Arg Val Gly Val Asp Gly Leu Leu Val Thr Asp Ala Gln Pro  
               610                  615                  620  
 Glu His Ser Gly Asn Tyr Gly Cys Tyr Ala Glu Glu Asn Gly Leu Arg  
               625                  630                  635                  640  
 Thr Leu Leu Ala Ser Tyr Ser Leu Thr Val Arg Pro Ala Thr Pro Ala  
               645                  650                  655  
 Pro Ala Pro Lys Ala Pro Ala Thr Pro Gly Ala Gln Leu Ala Pro Asp  
               660                  665                  670  
 Val Arg Leu Leu Tyr Val Leu Ala Ile Ala Ala Leu Gly Gly Leu Cys  
               675                  680                  685  
 Leu Ile Leu Ala Ser Ser Leu Leu Tyr Val Ala Cys Leu Arg Glu Gly  
               690                  695                  700  
 Arg Arg Gly Arg Arg Lys Tyr Ser Leu Gly Arg Ala Ser Arg Ala  
               705                  710                  715                  720  
 Gly Gly Ser Ala Val Gln Leu Gln Thr Val Ser Gly Arg Ala Leu Gln  
               725                  730                  735  
 Val His Met Gly Ser Met Ser Pro Pro Ser Ala Trp Pro Cys Val Leu  
               740                  745                  750  
 Asp Gly Pro Glu Thr Arg Gln Val Leu Cys Gln Pro Pro Lys Pro Cys  
               755                  760                  765  
 Val His Ser His Ala His Met Glu Glu Cys Leu Ser Ala Gly Leu Gln  
               770                  775                  780  
 Cys Pro His Pro His Leu Leu Leu Val His Ser Cys Phe Ile Pro Ala  
               785                  790                  795                  800  
 Ser Gly Leu Gly Val Pro Ser Gln Leu Pro His Pro Ile Trp Ser Ser  
               805                  810                  815  
 Ser Pro Ala Pro Cys Gly Asp Leu Phe Val Lys Ser Leu Gly Thr Gly  
               820                  825                  830  
 Gln Pro Gly Glu Val Arg Leu His His Ser Pro Pro Leu Pro Ser Cys  
               835                  840                  845  
 Val Ala Leu Val Asn Gln Pro Pro His Ser Pro Trp Ser Phe Ser Arg  
               850                  855                  860  
 Val  
       865

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 <211> 351  
 <212> DNA  
 <213> homo sapiens

<400> 34  
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 cccctctgtg cagccattga tgctgaggcc ttcaccttgc caaccagctt cgaggagggg      180  
 aaggagaagt gtccttatga cccagccgt ggcttcacag gcctcatcat tgatggaggc      240  
 ctctacacag ccacttagtta tgaattccgg agcattcctg acatccgccc gagccgccac      300  
 ccacactccc tgagaactga ggagacacca atgcattggc tcaatggta g      351

<210> 35  
 <211> 116  
 <212> PRT  
 <213> homo sapiens

<400> 35

Met Gln Ser Lys Cys His Gln Lys Gly Lys Asn Asn Gln Thr Glu Cys  
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 Phe Asn His Val Arg Phe Leu Gln Arg Leu Asn Ser Thr His Leu Tyr  
 20 25 30  
 Ala Cys Gly Thr His Ala Phe Gln Pro Leu Cys Ala Ala Ile Asp Ala  
 35 40 45  
 Glu Ala Phe Thr Leu Pro Thr Ser Phe Glu Glu Gly Lys Glu Lys Cys  
 50 55 60  
 Pro Tyr Asp Pro Ala Arg Gly Phe Thr Gly Leu Ile Ile Asp Gly Gly  
 65 70 75 80  
 Leu Tyr Thr Ala Thr Arg Tyr Glu Phe Arg Ser Ile Pro Asp Ile Arg  
 85 90 95  
 Arg Ser Arg His Pro His Ser Leu Arg Thr Glu Glu Thr Pro Met His  
 100 105 110  
 Trp Leu Asn Gly  
 115

<210> 36

<211> 1194

<212> DNA

<213> homo sapiens

<400> 36

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cccctctgtg cagccattga tgctgaggcc ttcaccttgc caaccagctt cgaggagggg	180
aaggagaagt gtccttatga cccagccctt ggcttcacag gcctcatcat tcatggaggc	240
ctctacacag ccacttaggt tgaattccgg agcattcctg acatccggc gagccggcac	300
ccacactccc tgagaactga ggagacacca atgcattggc tcaatgtatgc ggagtttg	360
ttctccgtcc tcgtgcggg gagcaaggcc agtgcagtgg gtgatgtatca caaggtgtac	420
tacttcttca cggagcgtgc cactgaggag ggctctggca gcttcactca gagccgcagc	480
agtcaccgtg tggccctgtt ggctcgytgc tgcaaggag acctgggagg gaagaagatc	540
ctgcagaaga agtggacttc cttcctgaaa gccgtctca tctgccacat tccactgtat	600
gagacactgc gtggggctcg cagcctggat gctgaaacct caagccgtac acacttctat	660
gcagccttca cgctgagcac acagtggaa accctggagg cctcagccat ctggcgctat	720
gaccctggcag agatccaggc tgtctttgca ggaccctata tggaaatacca ggatggttcc	780
cggcgctggg gtcgctatga ggggggggtg cctgagcccc ggcctggctc gtgtatcaca	840
gattcattgc gcagccaagg ctacaattca tcccaagact tgccatccct ggtcctggac	900
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ctgctcaagc gcaacatacg ctacacacac cttacaggga caccgtcac cacgcctgct	1020
ggacacctt atgacctgct ctttctgggc acagctgatg gctggatcca caaggccgta	1080
gtccctggct ctggatgca cattattgaa gagacacaag tggcaggaa gtccctgtct	1140
gtggaaaatc tagtcatctc tctattgcag gtggcccttc tctgtgaccc ttaa	1194

<210> 37

<211> 397

<212> PRT

<213> homo sapiens

<400> 37

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 20 25 30  
 Ala Cys Gly Thr His Ala Phe Gln Pro Leu Cys Ala Ala Ile Asp Ala  
 35 40 45

Glu	Ala	Phe	Thr	Leu	Pro	Thr	Ser	Phe	Glu	Glu	Gly	Lys	Glu	Lys	Cys	
50								55			60					
Pro	Tyr	Asp	Pro	Ala	Arg	Gly	Phe	Thr	Gly	Leu	Ile	Ile	Asp	Gly	Gly	
65								70			75			80		
Leu	Tyr	Thr	Ala	Thr	Arg	Tyr	Glu	Phe	Arg	Ser	Ile	Pro	Asp	Ile	Arg	
								85			90			95		
Arg	Ser	Arg	His	Pro	His	Ser	Leu	Arg	Thr	Glu	Glu	Thr	Pro	Met	His	
								100			105			110		
Trp	Leu	Asn	Asp	Ala	Glu	Phe	Val	Phe	Ser	Val	Leu	Val	Arg	Glu	Ser	
								115			120			125		
Lys	Ala	Ser	Ala	Val	Gly	Asp	Asp	Asp	Lys	Val	Tyr	Tyr	Phe	Phe	Thr	
								130			135			140		
Glu	Arg	Ala	Thr	Glu	Glu	Gly	Ser	Gly	Ser	Phe	Thr	Gln	Ser	Arg	Ser	
145								150			155			160		
Ser	His	Arg	Val	Ala	Arg	Val	Ala	Arg	Val	Cys	Lys	Gly	Asp	Leu	Gly	
								165			170			175		
Gly	Lys	Lys	Ile	Leu	Gln	Lys	Lys	Trp	Thr	Ser	Phe	Leu	Lys	Ala	Arg	
								180			185			190		
Leu	Ile	Cys	His	Ile	Pro	Leu	Tyr	Glu	Thr	Leu	Arg	Gly	Val	Cys	Ser	
								195			200			205		
Leu	Asp	Ala	Glu	Thr	Ser	Ser	Arg	Thr	His	Phe	Tyr	Ala	Ala	Phe	Thr	
								210			215			220		
Leu	Ser	Thr	Gln	Trp	Lys	Thr	Leu	Glu	Ala	Ser	Ala	Ile	Cys	Arg	Tyr	
								225			230			235		240
Asp	Leu	Ala	Glu	Ile	Gln	Ala	Val	Phe	Ala	Gly	Pro	Tyr	Met	Glu	Tyr	
								245			250			255		
Gln	Asp	Gly	Ser	Arg	Arg	Trp	Gly	Arg	Tyr	Glu	Gly	Gly	Val	Pro	Glu	
								260			265			270		
Pro	Arg	Pro	Gly	Ser	Cys	Ile	Thr	Asp	Ser	Leu	Arg	Ser	Gln	Gly	Tyr	
								275			280			285		
Asn	Ser	Ser	Gln	Asp	Leu	Pro	Ser	Leu	Val	Leu	Asp	Phe	Val	Lys	Leu	
								290			295			300		
His	Pro	Leu	Met	Ala	Arg	Pro	Val	Val	Pro	Thr	Arg	Gly	Arg	Pro	Leu	
								305			310			315		320
Leu	Leu	Lys	Arg	Asn	Ile	Arg	Tyr	Thr	His	Leu	Thr	Gly	Thr	Pro	Val	
								325			330			335		
Thr	Thr	Pro	Ala	Gly	Pro	Thr	Tyr	Asp	Leu	Leu	Phe	Leu	Gly	Thr	Ala	
								340			345			350		
Asp	Gly	Trp	Ile	His	Lys	Ala	Val	Val	Leu	Gly	Ser	Gly	Met	His	Ile	
								355			360			365		
Ile	Glu	Glu	Thr	Gln	Val	Phe	Arg	Glu	Ser	Gln	Ser	Val	Glu	Asn	Leu	
								370			375			380		
Val	Ile	Ser	Leu	Leu	Gln	Val	Ala	Leu	Leu	Cys	Asp	Pro				
								385			390			395		

<210> 38

<211> 1812

<212> DNA

<213> homo sapiens

<400> 38

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cccctctgtg	cagccattga	tgctgaggcc	ttcaccttgc	caaccagctt	cgaggaggggg	180
aaggagaagt	gtccttatga	cccagcccg	ggcttcacag	gcctcatcat	tgatggaggc	240
ctctacacag	ccacttaggtt	tgaattccgg	agcattcctg	acatccgccc	gagccgccac	300

ccacactccc	tgagaactga	ggagacacca	atgcattggc	tcaatgatgc	ggagttgtg	360
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gagacactgc	gtggggtctg	cagcctggat	gctgaaacct	caagccgtac	acacttctat	660
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gcccggagacc	cctactgtgg	ctgggacccct	ggcacccatg	cctgcccggc	agccaccacc	1320
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cgaggctgtg	agagcagcag	ggatacaggc	agggctctgc	aggtccatat	gggctcaatg	1440
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cagccaccta	agccctgcgt	acattcacat	gcacacatgg	aagaatgtt	atcggctggg	1560
ctgcagtgcc	cccaccctca	ccttctccctg	gtgcattctt	gtttcatccc	tgcttctgg	1620
cttgggtac	cctcccaatt	gccacatctt	atctggctct	cttcccagc	cccatgtgg	1680
gacctctttg	tcaagagctt	gggaacgggc	cagcctgggg	aggtaaagact	gcatcactcc	1740
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<210> 39

<211> 603

<212> PRT

<213> homo sapiens

<400> 39

Met	Gln	Ser	Lys	Cys	His	Gln	Lys	Gly	Lys	Asn	Asn	Gln	Thr	Glu	Cys	
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Phe	Asn	His	Val	Arg	Phe	Leu	Gln	Arg	Leu	Asn	Ser	Thr	His	Leu	Tyr	
									20		25			30		
Ala	Cys	Gly	Thr	His	Ala	Phe	Gln	Pro	Leu	Cys	Ala	Ala	Ile	Asp	Ala	
									35		40			45		
Glu	Ala	Phe	Thr	Leu	Pro	Thr	Ser	Phe	Glu	Glu	Gly	Lys	Glu	Lys	Cys	
									50		55			60		
Pro	Tyr	Asp	Pro	Ala	Arg	Gly	Phe	Thr	Gly	Leu	Ile	Ile	Asp	Gly	Gly	
									65		70			75		80
Leu	Tyr	Thr	Ala	Thr	Arg	Tyr	Glu	Phe	Arg	Ser	Ile	Pro	Asp	Ile	Arg	
									85		90			95		
Arg	Ser	Arg	His	Pro	His	Ser	Leu	Arg	Thr	Glu	Glu	Thr	Pro	Met	His	
									100		105			110		
Trp	Leu	Asn	Asp	Ala	Glu	Phe	Val	Phe	Ser	Val	Leu	Val	Arg	Glu	Ser	
									115		120			125		
Lys	Ala	Ser	Ala	Val	Gly	Asp	Asp	Asp	Lys	Val	Tyr	Tyr	Phe	Phe	Thr	
									130		135			140		
Glu	Arg	Ala	Thr	Glu	Glu	Gly	Ser	Gly	Ser	Phe	Thr	Gln	Ser	Arg	Ser	
									145		150			155		160
Ser	His	Arg	Val	Ala	Arg	Val	Ala	Arg	Val	Cys	Lys	Gly	Asp	Leu	Gly	
									165		170			175		
Gly	Lys	Lys	Ile	Leu	Gln	Lys	Lys	Trp	Thr	Ser	Phe	Leu	Lys	Ala	Arg	

180	185	190
Leu Ile Cys His Ile Pro Leu Tyr Glu Thr Leu Arg Gly Val Cys Ser		
195	200	205
Leu Asp Ala Glu Thr Ser Ser Arg Thr His Phe Tyr Ala Ala Phe Thr		
210	215	220
Leu Ser Thr Gln Trp Lys Thr Leu Glu Ala Ser Ala Ile Cys Arg Tyr		
225	230	235
Asp Leu Ala Glu Ile Gln Ala Val Phe Ala Gly Pro Tyr Met Glu Tyr		
245	250	255
Gln Asp Gly Ser Arg Arg Trp Gly Arg Tyr Glu Gly Gly Val Pro Glu		
260	265	270
Pro Arg Pro Gly Ser Cys Ile Thr Asp Ser Leu Arg Ser Gln Gly Tyr		
275	280	285
Asn Ser Ser Gln Asp Leu Pro Ser Leu Val Leu Asp Phe Val Lys Leu		
290	295	300
His Pro Leu Met Ala Arg Pro Val Val Pro Thr Arg Gly Arg Pro Leu		
305	310	315
Leu Leu Lys Arg Asn Ile Arg Tyr Thr His Leu Thr Gly Thr Pro Val		
325	330	335
Thr Thr Pro Ala Gly Pro Thr Tyr Asp Leu Leu Phe Leu Gly Thr Ala		
340	345	350
Asp Gly Trp Ile His Lys Ala Val Val Leu Gly Ser Gly Met His Ile		
355	360	365
Ile Glu Glu Thr Gln Val Phe Arg Glu Ser Gln Ser Val Glu Asn Leu		
370	375	380
Val Ile Ser Leu Leu Gln His Ser Leu Tyr Val Gly Ala Pro Ser Gly		
385	390	395
Val Ile Gln Leu Pro Leu Ser Ser Cys Ser Arg Tyr Arg Ser Cys Tyr		
405	410	415
Asp Cys Ile Leu Ala Arg Asp Pro Tyr Cys Gly Trp Asp Pro Gly Thr		
420	425	430
His Ala Cys Ala Ala Ala Thr Thr Ile Ala Asn Arg Ser Gln Gly Ser		
435	440	445
Arg Thr Ala Leu Ile Gln Asp Ile Glu Arg Gly Asn Arg Gly Cys Glu		
450	455	460
Ser Ser Arg Asp Thr Gly Arg Ala Leu Gln Val His Met Gly Ser Met		
465	470	475
Ser Pro Pro Ser Ala Trp Pro Cys Val Leu Asp Gly Pro Glu Thr Arg		
485	490	495
Gln Val Leu Cys Gln Pro Pro Lys Pro Cys Val His Ser His Ala His		
500	505	510
Met Glu Glu Cys Leu Ser Ala Gly Leu Gln Cys Pro His Pro His Leu		
515	520	525
Leu Leu Val His Ser Cys Phe Ile Pro Ala Ser Gly Leu Gly Val Pro		
530	535	540
Ser Gln Leu Pro His Pro Ile Trp Ser Ser Ser Pro Ala Pro Cys Gly		
545	550	555
Asp Leu Phe Val Lys Ser Leu Gly Thr Gly Gln Pro Gly Glu Val Arg		
565	570	575
Leu His His Ser Pro Pro Leu Pro Ser Cys Val Ala Leu Val Asn Gln		
580	585	590
Pro Pro His Ser Pro Trp Ser Phe Ser Arg Val		
595	600	

<210> 40  
<211> 1797

<212> DNA

<213> homo sapiens

<400> 40

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cccctctgtg cagccattga	tgctgaggcc ttcacccat	caaccagctt cgaggagggg	180
aaggagaagt gtccttatga	cccagcccg ggcttcacag	gcctcatcat tgatggaggc	240
ctctacacag ccacttaggt	tgaattccgg agcattcctg	acatccgccc gagccgcccc	300
ccacactccc tgagaactga	ggagacacca atgcattgc	tcaatgtat gc ggagttgt	360
ttctccgtcc tcgtgcggg	gagcaaggcc agtgcagtgg	gtgatgtat caagggttac	420
tacttcttca cggagcgtgc	cactgaggag ggctctggca	gcttcactca gagccgcagc	480
agtcaccgtg tggccctgt	ggctcgygtc tgcaagggag	acctggagg gaagaagatc	540
ctgcagaaga agtggacttc	cttcctgaaa gccctctca	tctgccacat tccactgtat	600
gagacactgc gtggggctcg	cagcctggat gctgaaacct	caagccgtac acacttctat	660
gcagccttca cgctgagcac	acagtggaa accctggagg	cctcagccat ctgcccctat	720
gacctggcag agatccaggc	tgtcttgca ggaccctata	tggaatacca ggatggttcc	780
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gattcattgc gcagccaagg	ctacaattca tcccaagact	tgccatccct ggtcctggac	900
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ctgctcaagc gcaacatacg	ctacacacac cttacaggga	cacctgtcac cacgcctgct	1020
ggacaccttcttctggc	acagctgtat gctggatcca	caaggccgtat	1080
gtcctggct ctggatgca	cattattgaa gagacacaag	tgttcagggta gtcccagtct	1140
gtggaaaatc tagtcatctc	tctattgcag cacagcctct	atgtggggc tcctagcgga	1200
gtcatccagc taccactctc	cagctgtcc cgctaccgat	cctgctatga ctgcatttt	1260
gcccgagacc cctactgtgg	ctgggacccct ggcacccatg	cctgcgcagc agccaccacc	1320
atagccaaca ggacagcact	gatacaggac atagagagag	gaaatcgagg ctgtgagagc	1380
agcagggata caggcagggc	tctgcaggc catatggct	aatgtcacc accctctgca	1440
tggccctgtg tgctggatgg	tcctgaaacc agacaagtcc	tctgccagcc acctaagccc	1500
tgcgtacatt cacatgcaca	catgaaagaa ttttatcg	ctgggctgca gtgcccccac	1560
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caattgcccac atcctatctg	gtctctttcc ccagccccat	gtggtgcacct ctttgtcaag	1680
agcttggaa cggccagcc	tggggaggta agactgcatac	actccctcc tctcccttcc	1740
tgtgtggccc ttgtaatca	gcctcccccac tctccttgc	cattctcaag agtatga	1797

<210> 41

<211> 598

<212> PRT

<213> homo sapiens

<400> 41

Met Gln Ser Lys Cys His Gln Lys Gly Lys Asn Asn Gln Thr Glu Cys			
1	5	10	15
Phe Asn His Val Arg Phe Leu Gln Arg Leu Asn Ser Thr His Leu Tyr			
20	25	30	
Ala Cys Gly Thr His Ala Phe Gln Pro Leu Cys Ala Ala Ile Asp Ala			
35	40	45	
Glu Ala Phe Thr Leu Pro Thr Ser Phe Glu Glu Gly Lys Glu Lys Cys			
50	55	60	
Pro Tyr Asp Pro Ala Arg Gly Phe Thr Gly Leu Ile Ile Asp Gly Gly			
65	70	75	80
Leu Tyr Thr Ala Thr Arg Tyr Glu Phe Arg Ser Ile Pro Asp Ile Arg			
85	90	95	
Arg Ser Arg His Pro His Ser Leu Arg Thr Glu Glu Thr Pro Met His			
100	105	110	
Trp Leu Asn Asp Ala Glu Phe Val Phe Ser Val Leu Val Arg Glu Ser			

115	120	125
Lys Ala Ser Ala Val Gly Asp	Asp Asp Lys Val Tyr	Tyr Phe Phe Thr
130	135	140
Glu Arg Ala Thr Glu Glu	Gly Ser Gly Ser Phe	Thr Gln Ser Arg Ser
145	150	155
Ser His Arg Val Ala Arg Val	Ala Arg Val Cys Lys	Gly Asp Leu Gly
165	170	175
Gly Lys Lys Ile Leu Gln Lys	Lys Trp Thr Ser Phe	Leu Lys Ala Arg
180	185	190
Leu Ile Cys His Ile Pro Leu	Tyr Glu Thr Leu Arg	Gly Val Cys Ser
195	200	205
Leu Asp Ala Glu Thr Ser Ser	Arg Thr His Phe	Tyr Ala Ala Phe Thr
210	215	220
Leu Ser Thr Gln Trp Lys	Thr Leu Glu Ala Ser	Ala Ile Cys Arg Tyr
225	230	235
Asp Leu Ala Glu Ile Gln Ala Val	Phe Ala Gly	Pro Tyr Met Glu Tyr
245	250	255
Gln Asp Gly Ser Arg Arg Trp	Gly Arg Tyr Glu	Gly Val Pro Glu
260	265	270
Pro Arg Pro Gly Ser Cys Ile	Thr Asp Ser Leu Arg	Ser Gln Gly Tyr
275	280	285
Asn Ser Ser Gln Asp Leu Pro	Ser Leu Val Leu Asp	Phe Val Lys Leu
290	295	300
His Pro Leu Met Ala Arg Pro	Val Val Pro Thr	Arg Gly Arg Pro Leu
305	310	315
Leu Leu Lys Arg Asn Ile Arg	Tyr Thr His Leu Thr	Gly Thr Pro Val
325	330	335
Thr Thr Pro Ala Gly Pro Thr	Tyr Asp Leu Leu Phe	Leu Gly Thr Ala
340	345	350
Asp Gly Trp Ile His Lys Ala	Val Val Leu Gly	Ser Gly Met His Ile
355	360	365
Ile Glu Glu Thr Gln Val	Phe Arg Glu Ser	Gln Ser Val Glu Asn Leu
370	375	380
Val Ile Ser Leu Leu Gln	His Ser Leu Tyr	Val Gly Ala Pro Ser Gly
385	390	395
Val Ile Gln Leu Pro Leu Ser	Ser Cys Ser Arg	Tyr Arg Ser Cys Tyr
405	410	415
Asp Cys Ile Leu Ala Arg Asp	Pro Tyr Cys Gly	Trp Asp Pro Gly Thr
420	425	430
His Ala Cys Ala Ala Ala	Thr Thr Ile Ala Asn	Arg Thr Ala Leu Ile
435	440	445
Gln Asp Ile Glu Arg Gly Asn	Arg Gly Cys Glu	Ser Ser Arg Asp Thr
450	455	460
Gly Arg Ala Leu Gln Val	His Met Gly	Ser Met Ser Pro Pro Ser Ala
465	470	475
Trp Pro Cys Val Leu Asp	Gly Pro Glu	Thr Arg Gln Val Leu Cys Gln
485	490	495
Pro Pro Lys Pro Cys Val	His Ser His Ala	His Met Glu Glu Cys Leu
500	505	510
Ser Ala Gly Leu Gln Cys	Pro His Pro His	Leu Leu Leu Val His Ser
515	520	525
Cys Phe Ile Pro Ala Ser	Gly Leu Gly Val	Pro Ser Gln Leu Pro His
530	535	540
Pro Ile Trp Ser Ser Ser	Pro Ala Pro Cys	Gly Asp Leu Phe Val Lys
545	550	555
Ser Leu Gly Thr Gly Gln	Pro Gly Glu	Val Arg Leu His His Ser Pro

565	570	575
Pro Leu Pro Ser Cys Val Ala Leu Val Asn Gln Pro Pro His Ser Pro		
580	585	590
Trp Ser Phe Ser Arg Val		
595		

<210> 42  
<211> 2235  
<212> DNA  
<213> homo sapiens

<400> 42

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cccctctgtg cagccattga tgctgaggcc ttcacccatgc caaccagctt cgaggagggg	180
aaggagaagt gtccttatga cccagcccgt ggcttcacag gcctcatcat tgatggaggc	240
ctctacacag ccacttaggtt tgaattccgg agcattcctg acatccgccc gagccgccac	300
ccacactccc tgagaactga ggagacacca atgcattggc tcaatgatgc ggagtttg	360
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gagacactgc gtggggctcg cagcctggat gctgaaacct caagccgtac acacttctat	660
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gtcctggct ctggatgca cattattgaa gagacacaag tggcaggta gtcctggatct	1140
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cgaggctgtg agagcagcag ggatacaggg ccaccaccac cactgaagac ccgcctgt	1440
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cctgccccag ctccaaaagc ccctgccaca cctggggcac agctggcacc tgatgtgaga	1740
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ctccctctatg tggctgtct gccccggc agacgaggc gcccacggaa atactactg	1860
ggtcgggcca gcccggcagg aggtctgcg gtgcactgc agacagtctc aggccagtgt	1920
cctggagagg aagatgaggg tgatgtgag ggggctgggg gcctggaggg cagctgtctc	1980
cagatcatcc ctggggaggg agcccccagcc ccaccacccc caccggccaccg	2040
gtcgagctga ccaatggctt ggtggcactg cccagccggc tgcggaggat gaatggcaat	2100
agctatgtgc ttctgaggca gagcaacaat ggagtaccag caggccctg ctccttcgccc	2160
gaggaactca gcccacatccct gaaaaaaagg aagcacacgc agctcgatggc gcaatgtat	2220
gagagctctg tctga	2235

<210> 43  
<211> 744  
<212> PRT  
<213> homo sapiens

<400> 43

Met Gln Ser Lys Cys His Gln Lys Gly Lys Asn Asn Gln Thr Glu Cys  
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Phe Asn His Val Arg Phe Leu Gln Arg Leu Asn Ser Thr His Leu Tyr  
20 25 30  
Ala Cys Gly Thr His Ala Phe Gln Pro Leu Cys Ala Ala Ile Asp Ala  
35 40 45  
Glu Ala Phe Thr Leu Pro Thr Ser Phe Glu Glu Gly Lys Glu Lys Cys  
50 55 60  
Pro Tyr Asp Pro Ala Arg Gly Phe Thr Gly Leu Ile Ile Asp Gly Gly  
65 70 75 80  
Leu Tyr Thr Ala Thr Arg Tyr Glu Phe Arg Ser Ile Pro Asp Ile Arg  
85 90 95  
Arg Ser Arg His Pro His Ser Leu Arg Thr Glu Glu Thr Pro Met His  
100 105 110  
Trp Leu Asn Asp Ala Glu Phe Val Phe Ser Val Leu Val Arg Glu Ser  
115 120 125  
Lys Ala Ser Ala Val Gly Asp Asp Asp Lys Val Tyr Tyr Phe Phe Thr  
130 135 140  
Glu Arg Ala Thr Glu Glu Gly Ser Gly Ser Phe Thr Gln Ser Arg Ser  
145 150 155 160  
Ser His Arg Val Ala Arg Val Ala Arg Val Cys Lys Gly Asp Leu Gly  
165 170 175  
Gly Lys Lys Ile Leu Gln Lys Lys Trp Thr Ser Phe Leu Lys Ala Arg  
180 185 190  
Leu Ile Cys His Ile Pro Leu Tyr Glu Thr Leu Arg Gly Val Cys Ser  
195 200 205  
Leu Asp Ala Glu Thr Ser Ser Arg Thr His Phe Tyr Ala Ala Phe Thr  
210 215 220  
Leu Ser Thr Gln Trp Lys Thr Leu Glu Ala Ser Ala Ile Cys Arg Tyr  
225 230 235 240  
Asp Leu Ala Glu Ile Gln Ala Val Phe Ala Gly Pro Tyr Met Glu Tyr  
245 250 255  
Gln Asp Gly Ser Arg Arg Trp Gly Arg Tyr Glu Gly Gly Val Pro Glu  
260 265 270  
Pro Arg Pro Gly Ser Cys Ile Thr Asp Ser Leu Arg Ser Gln Gly Tyr  
275 280 285  
Asn Ser Ser Gln Asp Leu Pro Ser Leu Val Leu Asp Phe Val Lys Leu  
290 295 300  
His Pro Leu Met Ala Arg Pro Val Val Pro Thr Arg Gly Arg Pro Leu  
305 310 315 320  
Leu Leu Lys Arg Asn Ile Arg Tyr Thr His Leu Thr Gly Thr Pro Val  
325 330 335  
Thr Thr Pro Ala Gly Pro Thr Tyr Asp Leu Leu Phe Leu Gly Thr Ala  
340 345 350  
Asp Gly Trp Ile His Lys Ala Val Val Leu Gly Ser Gly Met His Ile  
355 360 365  
Ile Glu Glu Thr Gln Val Phe Arg Glu Ser Gln Ser Val Glu Asn Leu  
370 375 380  
Val Ile Ser Leu Leu Gln His Ser Leu Tyr Val Gly Ala Pro Ser Gly  
385 390 395 400  
Val Ile Gln Leu Pro Leu Ser Ser Cys Ser Arg Tyr Arg Ser Cys Tyr  
405 410 415  
Asp Cys Ile Leu Ala Arg Asp Pro Tyr Cys Gly Trp Asp Pro Gly Thr  
420 425 430  
His Ala Cys Ala Ala Ala Thr Thr Ile Ala Asn Arg Ser Gln Gly Ser

435	440	445
Arg Thr Ala Leu Ile Gln Asp Ile Glu Arg Gly Asn Arg Gly Cys Glu		
450	455	460
Ser Ser Arg Asp Thr Gly Pro Pro Pro Pro Leu Lys Thr Arg Ser Val		
465	470	475
Leu Arg Gly Asp Asp Val Leu Leu Pro Cys Asp Gln Pro Ser Asn Leu		
485	490	495
Ala Arg Ala Leu Trp Leu Leu Asn Gly Ser Met Gly Leu Ser Asp Gly		
500	505	510
Gln Gly Tyr Arg Val Gly Val Asp Gly Leu Leu Val Thr Asp Ala		
515	520	525
Gln Pro Glu His Ser Gly Asn Tyr Gly Cys Tyr Ala Glu Glu Asn Gly		
530	535	540
Leu Arg Thr Leu Leu Ala Ser Tyr Ser Leu Thr Val Arg Pro Ala Thr		
545	550	555
Pro Ala Pro Ala Pro Lys Ala Pro Ala Thr Pro Gly Ala Gln Leu Ala		
565	570	575
Pro Asp Val Arg Leu Leu Tyr Val Leu Ala Ile Ala Ala Leu Gly Gly		
580	585	590
Leu Cys Leu Ile Leu Ala Ser Ser Leu Leu Tyr Val Ala Cys Leu Arg		
595	600	605
Glu Gly Arg Arg Gly Arg Arg Lys Tyr Ser Leu Gly Arg Ala Ser		
610	615	620
Arg Ala Gly Gly Ser Ala Val Gln Leu Gln Thr Val Ser Gly Gln Cys		
625	630	635
Pro Gly Glu Glu Asp Glu Gly Asp Asp Glu Gly Ala Gly Gly Leu Glu		
645	650	655
Gly Ser Cys Leu Gln Ile Ile Pro Gly Glu Gly Ala Pro Ala Pro Pro		
660	665	670
Pro Pro Pro Pro Pro Pro Ala Glu Leu Thr Asn Gly Leu Val		
675	680	685
Ala Leu Pro Ser Arg Leu Arg Arg Met Asn Gly Asn Ser Tyr Val Leu		
690	695	700
Leu Arg Gln Ser Asn Asn Gly Val Pro Ala Gly Pro Cys Ser Phe Ala		
705	710	715
Glu Glu Leu Ser Arg Ile Leu Glu Lys Arg Lys His Thr Gln Leu Val		
725	730	735
Glu Gln Leu Asp Glu Ser Ser Val		
740		

<210> 44

<211> 2220

<212> DNA

<213> homo sapiens

<400> 44

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ccccctctgt	cagccattga	tgctgaggcc	ttcaccttgc	caaccagctt	cgaggaggggg	180
aaggagaagt	gtccttatga	cccagccgt	ggcttcacag	gcctcatcat	tgatggaggc	240
ctctacacag	ccacttagtta	tgaattccgg	agcattcctg	acatccgccg	gagccgccac	300
ccacactccc	tgagaactga	ggagacacca	atgcattggc	tcaatgatgc	ggagtttg	360
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 Glu Gly Asp Asp Glu Gly Ala Gly Gly Leu Glu Gly Ser Cys Leu Gln  
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 Ile Ile Pro Gly Glu Gly Ala Pro Ala Pro Pro Pro Pro Pro Pro Pro  
 660 665 670  
 Pro Pro Pro Ala Glu Leu Thr Asn Gly Leu Val Ala Leu Pro Ser Arg  
 675 680 685  
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 690 695 700  
 Asn Gly Val Pro Ala Gly Pro Cys Ser Phe Ala Glu Glu Leu Ser Arg  
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<211> 2316

<212> DNA

<213> homo sapiens

<400> 46

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<211> 771

<212> PRT

<213> homo sapiens

<400> 47

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35 40 45  
Glu Ala Phe Thr Leu Pro Thr Ser Phe Glu Glu Gly Lys Glu Lys Cys  
50 55 60  
Pro Tyr Asp Pro Ala Arg Gly Phe Thr Gly Leu Ile Ile Asp Gly Gly  
65 70 75 80  
Leu Tyr Thr Ala Thr Arg Tyr Glu Phe Arg Ser Ile Pro Asp Ile Arg  
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Arg Ser Arg His Pro His Ser Leu Arg Thr Glu Glu Thr Pro Met His  
100 105 110  
Trp Leu Asn Asp Ala Glu Phe Val Phe Ser Val Leu Val Arg Glu Ser  
115 120 125  
Lys Ala Ser Ala Val Gly Asp Asp Asp Lys Val Tyr Tyr Phe Phe Thr  
130 135 140  
Glu Arg Ala Thr Glu Glu Gly Ser Gly Ser Phe Thr Gln Ser Arg Ser  
145 150 155 160  
Ser His Arg Val Ala Arg Val Ala Arg Val Cys Lys Gly Asp Leu Gly  
165 170 175  
Gly Lys Lys Ile Leu Gln Lys Lys Trp Thr Ser Phe Leu Lys Ala Arg  
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Leu Asp Ala Glu Thr Ser Ser Arg Thr His Phe Tyr Ala Ala Phe Thr  
210 215 220  
Leu Ser Thr Gln Trp Lys Thr Leu Glu Ala Ser Ala Ile Cys Arg Tyr  
225 230 235 240  
Asp Leu Ala Glu Ile Gln Ala Val Phe Ala Gly Pro Tyr Met Glu Tyr  
245 250 255  
Gln Asp Gly Ser Arg Arg Trp Gly Arg Tyr Glu Gly Gly Val Pro Glu  
260 265 270  
Pro Arg Pro Gly Ser Cys Ile Thr Asp Ser Leu Arg Ser Gln Gly Tyr  
275 280 285  
Asn Ser Ser Gln Asp Leu Pro Ser Leu Val Leu Asp Phe Val Lys Leu  
290 295 300  
His Pro Leu Met Ala Arg Pro Val Val Pro Thr Arg Gly Arg Pro Leu  
305 310 315 320  
Leu Leu Lys Arg Asn Ile Arg Tyr Thr His Leu Thr Gly Thr Pro Val  
325 330 335  
Thr Thr Pro Ala Gly Pro Thr Tyr Asp Leu Leu Phe Leu Gly Thr Ala

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385	390	395
Val Ile Gln Leu Pro Leu Ser Ser Cys Ser Arg Tyr Arg Ser Cys Tyr		
405	410	415
Asp Cys Ile Leu Ala Arg Asp Pro Tyr Cys Gly Trp Asp Pro Gly Thr		
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Arg Thr Ala Leu Ile Gln Asp Ile Glu Arg Gly Asn Arg Gly Cys Glu		
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Ser Ser Arg Asp Thr Gly Pro Pro Pro Pro Leu Lys Thr Arg Ser Val		
465	470	475
Leu Arg Gly Asp Asp Val Leu Leu Pro Cys Asp Gln Pro Ser Asn Leu		
485	490	495
Ala Arg Ala Leu Trp Leu Leu Asn Gly Ser Met Gly Leu Ser Asp Gly		
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Gln Gly Gly Tyr Arg Val Gly Val Asp Gly Leu Leu Val Thr Asp Ala		
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Gln Pro Glu His Ser Gly Asn Tyr Gly Cys Tyr Ala Glu Glu Asn Gly		
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Pro Ala Pro Ala Pro Lys Ala Pro Ala Thr Pro Gly Ala Gln Leu Ala		
565	570	575
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Leu Cys Leu Ile Leu Ala Ser Ser Leu Leu Tyr Val Ala Cys Leu Arg		
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Glu Gly Arg Arg Gly Arg Arg Lys Tyr Ser Leu Gly Arg Ala Ser		
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Arg Ala Gly Gly Ser Ala Val Gln Leu Gln Thr Val Ser Gly Arg Ala		
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Leu Gln Val His Met Gly Ser Met Ser Pro Pro Ser Ala Trp Pro Cys		
645	650	655
Val Leu Asp Gly Pro Glu Thr Arg Gln Val Leu Cys Gln Pro Pro Lys		
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Pro Cys Val His Ser His Ala His Met Glu Glu Cys Leu Ser Ala Gly		
675	680	685
Leu Gln Cys Pro His Pro His Leu Leu Leu Val His Ser Cys Phe Ile		
690	695	700
Pro Ala Ser Gly Leu Gly Val Pro Ser Gln Leu Pro His Pro Ile Trp		
705	710	715
Ser Ser Ser Pro Ala Pro Cys Gly Asp Leu Phe Val Lys Ser Leu Gly		
725	730	735
Thr Gly Gln Pro Gly Glu Val Arg Leu His His Ser Pro Pro Leu Pro		
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<211> 2301  
<212> DNA  
<213> homo sapiens

<400> 48

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<212> PRT  
<213> homo sapiens

<400> 49

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 Pro Tyr Asp Pro Ala Arg Gly Phe Thr Gly Leu Ile Ile Asp Gly Gly  
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 Leu Tyr Thr Ala Thr Arg Tyr Glu Phe Arg Ser Ile Pro Asp Ile Arg  
                  85                 90                 95  
 Arg Ser Arg His Pro His Ser Leu Arg Thr Glu Glu Thr Pro Met His  
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 Trp Leu Asn Asp Ala Glu Phe Val Phe Ser Val Leu Val Arg Glu Ser  
                  115                120                125  
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 Ser His Arg Val Ala Arg Val Ala Arg Val Cys Lys Gly Asp Leu Gly  
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 Gly Lys Lys Ile Leu Gln Lys Lys Trp Thr Ser Phe Leu Lys Ala Arg  
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 Leu Ile Cys His Ile Pro Leu Tyr Glu Thr Leu Arg Gly Val Cys Ser  
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 Leu Ser Thr Gln Trp Lys Thr Leu Glu Ala Ser Ala Ile Cys Arg Tyr  
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 Asp Leu Ala Glu Ile Gln Ala Val Phe Ala Gly Pro Tyr Met Glu Tyr  
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 Gln Asp Gly Ser Arg Arg Trp Gly Arg Tyr Glu Gly Val Pro Glu  
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 Pro Arg Pro Gly Ser Cys Ile Thr Asp Ser Leu Arg Ser Gln Gly Tyr  
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 His Pro Leu Met Ala Arg Pro Val Val Pro Thr Arg Gly Arg Pro Leu  
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 Leu Leu Lys Arg Asn Ile Arg Tyr Thr His Leu Thr Gly Thr Pro Val  
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 Val Ile Gln Leu Pro Leu Ser Ser Cys Ser Arg Tyr Arg Ser Cys Tyr  
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 Asp Cys Ile Leu Ala Arg Asp Pro Tyr Cys Gly Trp Asp Pro Gly Thr  
                  420                425                430  
 His Ala Cys Ala Ala Ala Thr Thr Ile Ala Asn Arg Thr Ala Leu Ile  
                  435                440                445  
 Gln Asp Ile Glu Arg Gly Asn Arg Gly Cys Glu Ser Ser Arg Asp Thr  
                  450                455                460  
 Gly Pro Pro Pro Pro Leu Lys Thr Arg Ser Val Leu Arg Gly Asp Asp  
                  465                470                475                480

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Leu	Leu	Asn	Gly	Ser	Met	Gly	Leu	Ser	Asp	Gly	Gln	Gly	Gly	Tyr	Arg
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Ala	Ser	Tyr	Ser	Leu	Thr	Val	Arg	Pro	Ala	Thr	Pro	Ala	Pro	Ala	Pro
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Lys	Ala	Pro	Ala	Thr	Pro	Gly	Ala	Gln	Leu	Ala	Pro	Asp	Val	Arg	Leu
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Leu	Tyr	Val	Leu	Ala	Ile	Ala	Ala	Leu	Gly	Gly	Leu	Cys	Leu	Ile	Leu
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Ala	Ser	Ser	Leu	Leu	Tyr	Val	Ala	Cys	Leu	Arg	Glu	Gly	Arg	Arg	Gly
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Arg	Arg	Arg	Lys	Tyr	Ser	Leu	Gly	Arg	Ala	Ser	Arg	Ala	Gly	Gly	Ser
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Glu	Thr	Arg	Gln	Val	Leu	Cys	Gln	Pro	Pro	Lys	Pro	Cys	Val	His	Ser
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His	Ala	His	Met	Glu	Glu	Cys	Leu	Ser	Ala	Gly	Leu	Gln	Cys	Pro	His
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Pro	His	Leu	Leu	Leu	Val	His	Ser	Cys	Phe	Ile	Pro	Ala	Ser	Gly	Leu
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Gly	Val	Pro	Ser	Gln	Leu	Pro	His	Pro	Ile	Trp	Ser	Ser	Ser	Pro	Ala
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Pro	Cys	Gly	Asp	Leu	Phe	Val	Lys	Ser	Leu	Gly	Thr	Gly	Gln	Pro	Gly
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Glu	Val	Arg	Leu	His	His	Ser	Pro	Pro	Leu	Pro	Ser	Cys	Val	Ala	Leu
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